

Chapter: 3

Data Base Design Process

Multiple Choice Questions

Q 1: Following involves the area identification and selection:

- ☒ (A) Feasibility study ☐ (B) Feasibility analysis
☐ (C) Initial study ☐ (D) Initial examination

Q 2: In the following activity, the possible inputs for the database are obtained:

- ☐ (A) Project planning ☒ (B) Requirements analysis
☐ (C) Feasibility study ☐ (D) Data analysis

Q 3: In the following activity, the cost factors are taken into consideration:

- ☒ (A) Project planning ☐ (B) Requirements analysis
☐ (C) Feasibility study ☐ (D) Data analysis

Q 4: Following are the tools involved to the data Analysis:

- ☐ (A) Data flow diagram ☐ (B) Decision tree ☐ (C) Decision table ☒ (D) All of these

Q 5: The relationship between the entities is represented graphically by using:

- ☒ (A) E - R diagram ☐ (B) Data flow diagram
☐ (C) Flow charts ☐ (D) Decision tables

Q 6: In an E - R Diagram, a rectangle represents a (n):

- ☒ (A) Entity ☐ (B) Attributes ☐ (C) Relationship ☐ (D) Field

Q 7: In an E - R Diagram, a diamond represents a (n):

- ☐ (A) Attributes ☒ (B) Relationship ☐ (C) Entity ☐ (D) Modality

Q 8: In the ERD model, the relationships between two entities are represented by:

- ☒ (A) Rectangle ☐ (B) Oval ☐ (C) Square ☐ (D) Diamond

Q 9: An entity related to itself in an ERD model refers to relationship:

- ☒ (A) Recursive ☐ (B) One to many ☐ (C) Many to many ☐ (D) One to one

Q10: Which one of the following is used to associate entities with each other?

- ☐ (A) Attributes ☐ (B) Entities ☐ (C) Relationship ☒ (D) Cardinals / Identifier

Q11: Which one is not related to an entity?

- ☐ (A) Person ☒ (B) Concept ☐ (C) Action ☐ (D) Object

Q12: Following is / are the ingredient (s) of data modeling

- ☐ (A) Objects ☐ (B) Attributes ☐ (C) Relationships ☒ (D) All of these

Q13: Following is a type of relationship:

- ☐ (A) One to One ☐ (B) One to Many ☐ (C) Many to many ☒ (D) All of these

Q14: Following defines the nature of the relationship:

- ☐ (A) Cardinality ☒ (B) Modality ☐ (C) Simple ☐ (D) Recursion

Q15: The optional relationship represented by:

- ☐ (A) Data Objects ☐ (B) Association ☐ (C) Cardinality and Modality ☒ (D) All of these

Q16: Merge the relations is also called:

- ☐ (A) View data model ☐ (B) View relation ☒ (C) View integration ☐ (D) ERD

Q17: Organizing the database on secondary storage is called:

- ☐ (A) Logical design ☒ (B) Physical design
☐ (C) Implementation ☐ (D) Analysis

Q18: Following is the basic distribution strategy:

- ☐ (A) Centralized ☐ (B) Partitioned ☐ (C) Replicated ☒ (D) All of these

Q19: Following is not an example of data distribution strategy:

- ☐ (A) Centralized ☒ (B) Balanced ☐ (C) Replicated ☐ (D) Partitioned

Q20: Data is stored at single site is following strategy:

- ☒ (A) Centralized ☐ (B) Distributed ☐ (C) Hybrid ☐ (D) Partitioned

Q21: Following is an advantage of partitioning:

- ☐ (A) Reliability ☐ (B) Extra space ☒ (C) Efficiency ☐ (D) Accuracy

Q22: Non critical fragments are stored at following number of site(s):

- ☒ (A) 1 ☐ (B) 2 ☐ (C) 3 ☐ (D) Multiple

Q23: Critical fragments are stored at following number of site(s):

- ☐ (A) 1 ☐ (B) 2 ☐ (C) 3 ☒ (D) Multiple

Q24: Following factor is considered when selecting file organization method:

- ☐ (A) Efficient storage ☐ (B) Fast retrieval ☐ (C) Security ☒ (D) All of these

Q25: The following keys does not hold uniqueness property:

- ☐ (A) Candidate key ☐ (B) Foreign key ☐ (C) Sort key ☒ (D) Secondary key

Q26: In database, correctness and consistency refers to:

- ☐ (A) Constraints ☒ (B) Integrity constraints ☐ (C) Database constraints ☐ (D) Indexes

Q27: The implementation model of database design is derived from:

- ☒ (A) Relational Model ☐ (B) User Model
☐ (C) Conceptual - Model ☐ (D) Data Model

Q28: Database development process involve mapping of conceptual data model into:

- ☐ (A) Object-oriented data model ☒ (B) Implementation model
☐ (C) Network data model ☐ (D) Network data model

Q29: Which of the following keys does not hold uniqueness property?

- ☐ (A) Candidate key ☐ (B) Foreign key ☐ (C) Primary key ☒ (D) Secondary key

Q30: An entity related to itself in an ERD model refers to:

- ☒ (A) Recursive relationship ☐ (B) Many - to - many relationship
☐ (C) Non - to - many relationship ☐ (D) One - to - one relationship

Q31: In ERD model, the relationship between two entities is represented by a:

- ☐ (A) Diamond symbol ☐ (B) Oval symbol ☐ (C) Rectangular box ☒ (D) Line

Q32: In hybrid distribution which kind of fragments are stored at only one site:

- ☐ (A) Critical fragments ☐ (B) Critical and Non-critical fragments
☒ (C) Non-critical fragments ☐ (D) Only large fragments

Short Questions

Q1: Define analysis.

Ans: A process of studying the existing system is known as analysis. The analysis also determines what should take place in the new system. It is a very important activity for the development of database system. The person responsible for the requirement analysis is called "Analyst".

Q2: What is the importance of project planning?

Ans: Project planning is part of project management. Initially the project scope is defined and the appropriate methods for completing the project are determined.

Following this steps, the duration for the various tasks necessary to complete the

Work listed and grouped into a work breakdown structure. Then the necessary resources can be estimated and costs for each activity can be allocated to each resource, giving the total project cost.

Q3: What is data modelling?

Ans: The identification of data objects and their relationships to other data objects. Data modelling is often the first step in database design. Designers first create a conceptual model of how data items relate to each other. Data modelling involves a progression from conceptual model to logical model to physical schema.

Q4: Define cardinality.

Ans: The number of entity occurrences of first entity associated with one or more occurrences of the second entity is known as cardinality. It is expressed as one or many e.g. a country can have many cities but a country can have only one capital.

Q5: Define Modality.

Ans: Modality defines whether the participation of an entity in a relationship is mandatory or optional. If a relationship has a cardinality of zero, then it is an optional relationship. If relationship has cardinality of at least one the relationship is mandatory.

Q6: What is an E-R diagram?

Ans: An entity relationship E-R diagram is a specialized graphic that illustrates the interrelationships between entities in a database. ER diagram often use symbols to represent three different types of information.

Q7: What is logical database design?

Ans: It is the process of mapping the conceptual model to the structures of the target DBMS. If the target database is relational then it will be mapped on normalized relations.

Q8: What is physical database design?

Ans: Physical database design is the last step of database design. The objective of physical database design is to implement the database as a set of stored, records, files, indexes and other data structures. These data structures provide performance and also ensure data integrity, security and recoverability.

Q9: What is meant by centralized database distribution?

Ans: In centralized database all the data is stored at single location. It is easy but have a few disadvantages. Data communications may be high in some cases. Data is not readily accessible by remote users. If central server fails, whole database fails.

Q10: What is partitioned database distribution?

Ans: In partition distribution data is divided into fragments and these fragments of data are placed at different computers. It is more accessible than centralized database strategy.

Q11: What is replicated database distribution?

Ans: Full copy of database is stored on some other computer. Any change in parent computer is replicated to the others. In this strategy more storage is required. There can be a huge communication cost while replication. Frequent synchronization is also required.

